



"NORTH TECHNICAL UNIVERSITY"

FACULTY OF APPLIED SCIENCES ENGINEERING

CAREER OF TEXTILE AND FASHION DESIGN ENGINEERING

“RESEARCH ABOUT SILICONE MICROEMULSION AS A RUCHING AGENT IN A SATIN FABRIC MADE OF POLYESTER LYCRA IS APPLIED TO A COLLECTION OF COCKTAIL DRESSES”.

TECHNICAL REPORT

AUTHOR:

Gabriela Elizabeth Juma Yar

DIRECTOR:

Ing. Willam Esparza

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"Research about silicone microemulsion as a ruching agent in a satin fabric made of polyester lycra is applied to a collection of cocktail dresses".

Juma, Gabriela¹

North Technical University -UTN, Ibarra, Imbabura

gaby_lyz89@hotmail.com

Abstract. - Fashion design is responsible for the creation of garments and accessories developed in cultural and social influences. These outfits are made using couture techniques, which means creations are made with expensive materials and manufacturing is done by hand. This work is made with a ruched finish using Tie dye techniques (knots) to create different shapes or designs. It applies a process of exhaustion in which the silicone is mixed with moisturizer to obtain the result of ruching. The time used to perform this finish is 20 minutes at temperature of 40 ° c; after this process is executed, the centrifuge removes excess water acquired in the bath. Immediately, a dryer is used in order to stabilize the wrinkle. When the sample is fully dry, all existing knots break up; each dress design is made of a different ruching. The whole process is done in satin fabric, which is an elegant fabric used in party dresses. The colors black, white, and gray are combined at the end of the ruching process, in which the color of the dress is chosen; once this process is finished, a collection of patterned dresses is made and all the pieces are obtained. Each piece is cut

from the ruched cloth. The process of making the entire collection is elaborated with some advanced methods to ensure a delicate garment.

Keywords

Silicone, roughness, Satin, Dresses.

Resumen.- El diseño de modas se encarga de la creación de prendas y accesorios desarrollados dentro de influencias culturales y sociales. Estos atuendos son elaborados mediante técnicas de alta costura, que significa creaciones con materiales costosos y su confección es realizada a mano. En este trabajo se realizó un acabado de rugosidad empleando técnicas del Tie dye (nudos) para crear diferentes formas o diseños, se aplica un proceso de agotamiento en el cual colocamos la silicona juntamente con humectante para favorecer el resultado de las rugosidades, el tiempo empleado para realizar este acabado es de 20 minutos, a una temperatura de 40°C; luego de este proceso se ejecuta el centrifugado para eliminar el exceso de agua adquirido en el baño. Inmediatamente se emplea la secadora en el proceso de



secado con la finalidad de estabilizar la arruga, cuando está totalmente seca la muestra se deshacen todos los nudos existentes; para cada vestido se desarrolla un diferente diseño de rugosidad, empleando en todos las mismas técnicas. Todo este proceso es ejercido en un tejido satín, el cual es un género elegante y muy utilizado en vestidos de fiesta, se combinó entre los colores blanco, plomo y negro; en este último se desarrollaron las rugosidades, debido a que los vestidos están constituidos en su mayor parte por este color; terminado este proceso se realizó el patronaje de los vestidos de la colección, ya obtenido todas las piezas, se procedió a cortar cada atuendo en la tela con rugosidades. Se elaboró el proceso de confección de toda la colección, con algunos métodos de alta costura para asegurar una confección delicada.

Palabras claves

Silicona, Rugosidad, Satín, Vestidos.

INTRODUCTION

Currently, the lack of creativity and innovation in presenting collections of clothing has become somewhat repetitive in designs and textiles being used. This problem arises both nationally and internationally, which discredits the designer and future designers. This collection of cocktail dresses will encourage the research of new finishing processes to create clothing collections.

The developed ruched finish shows different designs because in their manufacturing, Tie dye is used. The fabric used in this finish facilitates the formation of the ruching since it is a thin tissue. With the introduction of a cocktail dress collection, it shows that it is possible to create something different and new.

- **The fashion design**

Fashion design is the art dedicated to the creation of clothing and accessories within cultural and social influences, in a specific period.

It is the art of managing people's image.

- **The collection**

It is a set of garments that have consistency with each other. They are created by a designer, intended for a particular season and whose prototypes are presented on human mannequins. The collection varies depending on market level, product type, season and customer.

- **Cocktail Dress**

Cocktail dresses are a mix between a prom gown and a casual dress, so they are comfortable and stylish. They are usually dressed in the knee or halfway up the leg. You can use at night and in the day, in formal and informal events.



- **Haute Couture**

The term "haute couture" or haute couture was born in Paris, France, a city that is considered today as the world capital of fashion.

Haute couture refers to the creation of tailored clothing and each customer's order, haute couture is not work in series. These garments are made of high quality fabrics and high prices as regards to materials and workmanship as these outfits require great attention and knowledge to do so.

- **Finishes**

Finishing is the process that takes place on the fabric to modify their behavior, feel or appearance, this process is usually done before or after the making.

- **Silicone**

It is an odorless, colorless polymer formed from silicon and is the second most abundant chemical element in the earth's crust. Silicone is inert and stable at high temperatures, making it useful in various human activities, both at home, health, industry, automotive etc.

- **Wetting agents**

A wetting agent is a surfactant added to water reduces the surface tension and promote wetting by water to enter easily

into another material or more easily spread over the surface.

PART PRACTICE

- **APPLICATION TESTING OF SILICONE**

Sample No. 1

Team: Open

Material: Fabric Satin

Weight: 12 grams

R / B: 1/20

Process: Roughness

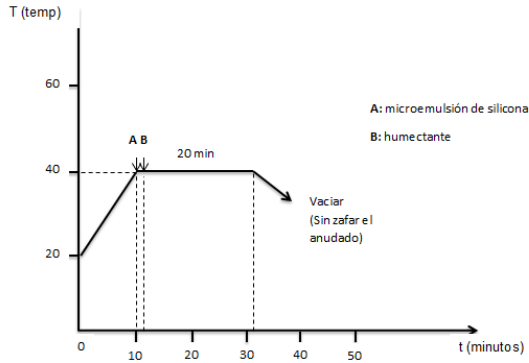
Products: Silicone Microemulsion - moisturizer

Weight silicone microemulsion: 5%

Moisturizing weight: 0.5 grams x liter of water

Product		Quantity
R/B (1:20) (liquor ratio)	(12 gr x 20ml)/1	240 ml
Silicone	(12 gr x 5%)/100	0,6 gr
Moisturizer	(0,5 gr x 240 ml)/1000	0,12 gr

The process of surface roughness curve



Results: In this test it was observed that the finishes of ruching are formed properly, but it does not have resistance to ironing since the percentage of silicone microemulsion is minimal.

Sample No. 2

Team: Open

Material: Fabric Satin

Weight: 12 grams

R / B: 1/20

Process: Roughness

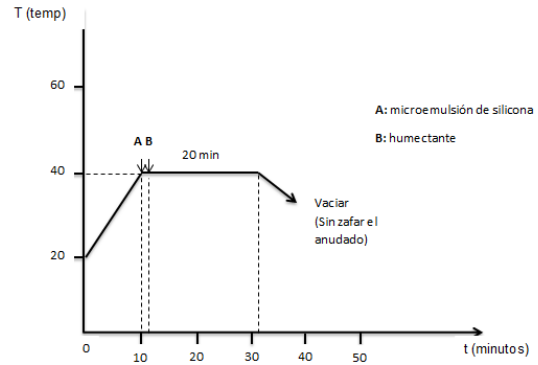
Products: Silicone Microemulsion - moisturizer

Weight silicone microemulsion: 10%

Moisturizing weight: 0.5 grams x liter of water

Product		Cuantity
R/B (1:20) (liquor ratio)	(12 gr x 240ml)/1	240 ml
Silicone	(12 gr x 10%)/100	1,2 gr
Moisturizer	(0,5 gr x 240 ml)/1000	0,12 gr

The process of surface roughness curve



Results: In this process the sample was observed that ruching has better resistance and strength with respect to ironing, but it is not the concentration that is required to be applied to clothes.

Sample No. 3

Team: Open

Material: Fabric satin

Weight: 12 grams

R/B: 1/20

Process: Roughness

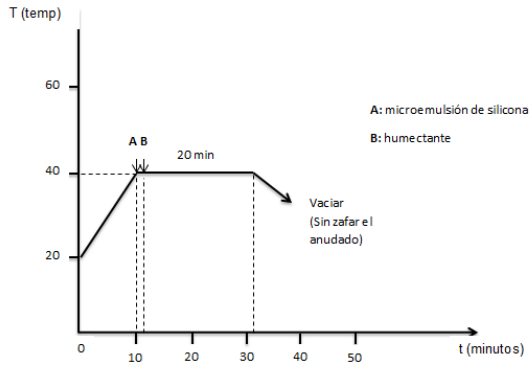
Products: Silicone Microemulsion - moisturizer

Weight silicone microemulsion: 20%

Moisturizing weight: 0.5 grams x liter of water

Product		Cuantity
R/B (1:20) (liquor ratio)	(12 gr x 240ml)/1	240 ml
Silicone	(12 gr x 20%)/100	2,4 gr
Moisturizer	(0,5 gr x 240 ml)/1000	0,12 gr

The process of surface roughness curve



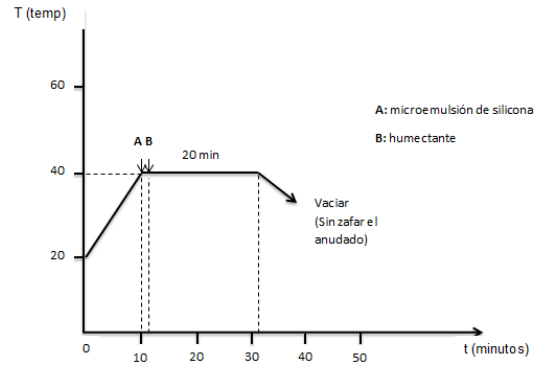
Result: It was observed that the ruching has an adequate strength which resists to quality control tests such as ironing, washing, rub. This percentage is best suited for ruched finishing.

Sample No. 4

- Team:** Open
- Material:** Fabric Satin
- Weight:** 12 grams
- R / B:** 1/20
- Process:** Roughness
- Products:** Silicone Microemulsion - moisturizer
- Weight silicone microemulsion:** 30%
- Moisturizing weight:** 0.5 grams x liter of water

Product		Cuantity
R/B (1:20) (liquor ratio)	(12 gr x 20ml)/1	240 ml
Silicone	(12 gr x 30%)/100	3,6 gr
Moisturizer	(0,5 gr x 240 ml)/1000	0,12 gr

The process of surface roughness curve



Results: In this process it was observed that the ruching resist washing tests, rubbing and ironing, so these show similar characteristics to the previous test, but if it increases the silicone, the microemulsion becomes a more viscous bath which lowers the level of exhaustion.

SAMPLE TESTING QUALITY CONTROL (with 20% concentration of the silicone microemulsion)



Resistance to Light: The abuse of the cloth when it is exposed to air contributed to the loss of the finish.



Light Wash (by hand): The ruching is not lost.



Ironing: Resists temperatures as low as 55 ° C, if the temperature is increased, the ruching disappears rapidly (78 ° C).



Machine washing: The ruching is not lost.



Scrub resistance: The ruching is not lost.



**SKETCHES OF DRESSES
COCKTAIL**

Dress 1

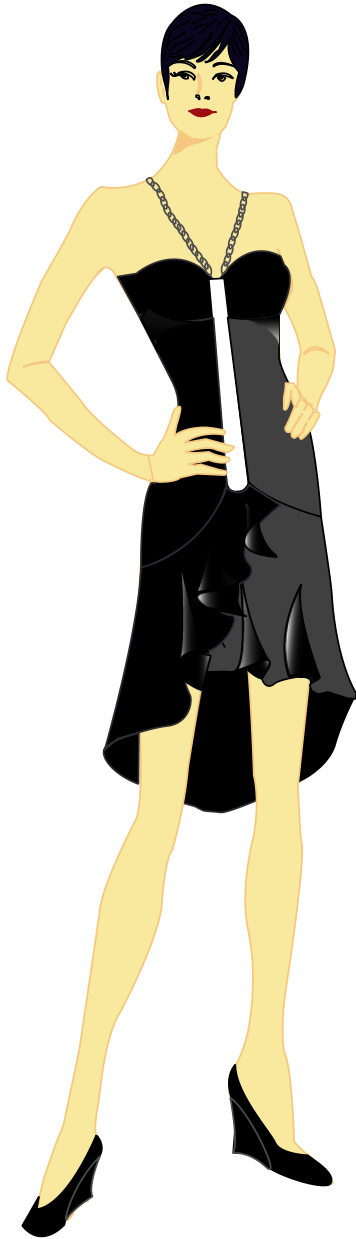


Dress 2





Dress 3

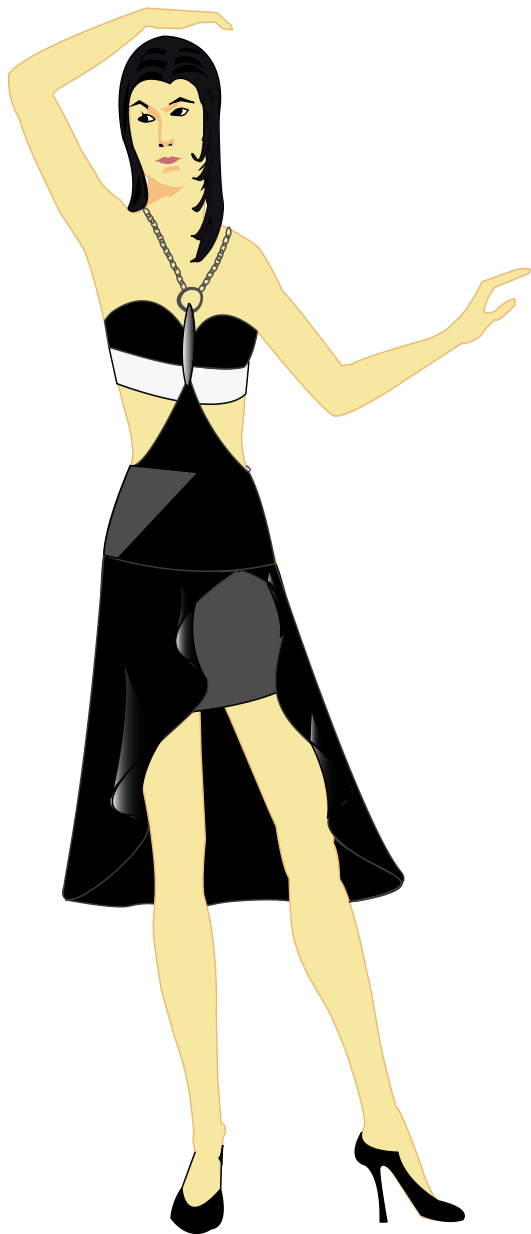


Dress 4

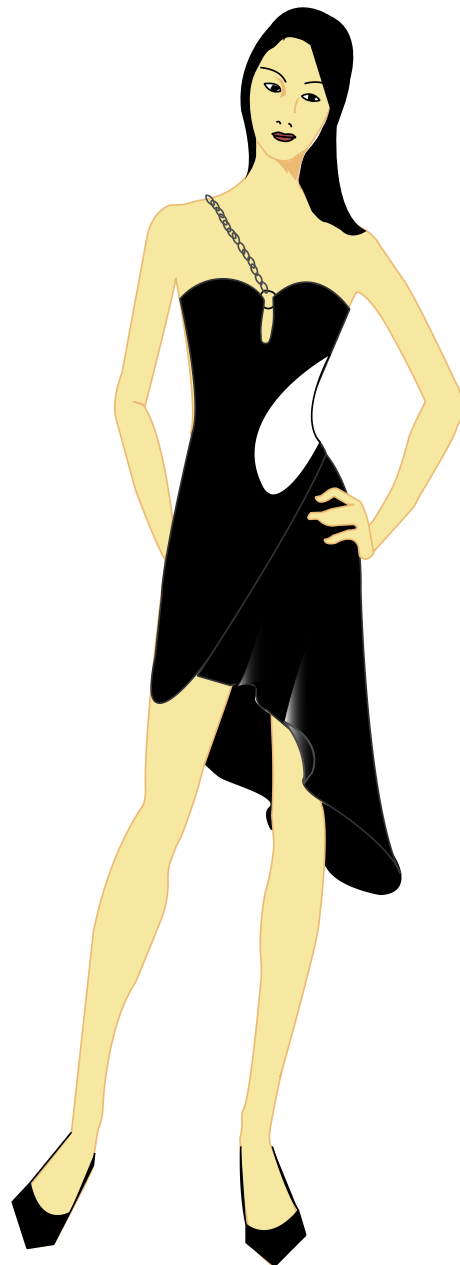




Dress 5



Dress 6





CONCLUSIONS

- The world of fashion is not only creating something beautiful, but also it is studying the client to whom our product is going to.
- High fashion is an original work that any professional can do, because these items require much care and skill in the entire production process.
- The satin fabric is composed of polyester and Lycra. It contributes positively to the process of ruching since it is lightweight, and it provides greater formation of wrinkles than thick cloth.
- In the bath the ruching mixes the silicone microemulsion and the wetting to improve the final characteristics since it provides a better absorption of the products used, and it will have a stronger finish.
- The different effects of ruching were performed using the technique of tie dye and their shapes vary according to the folds, tying of knots, and concentration of silicone microemulsion that is exerted on the cloth.
- The 20 % concentration of the silicone microemulsion is best suited to carry out the ruching. By applying the 30 % concentration, similar characteristics are performed in the washing tests, rubbing, and ironing, in comparison to the 20% application of the silicone (as you increase the silicone microemulsion the bath becomes more viscous, thus reducing the level of exhaustion). The 10% concentration of silicone can not withstand long ironing for 1 minute since in this process loses a large percentage of ruching.
- The optimum temperature for the bath is 40 ° C; if it increases, the silicone microemulsion reacts and emulsifies in different parts, causing some stains in the tissue.
- The cost of production of the collection is high due to each dress, which varies from \$ 27.28 to \$ 30.21. However the price of each ruched finish increases from \$ 1.48 to \$ 3.41 depending on the design. The cost of finished ruching is not representative in the final costs of the collection.
- In ruching that has the same design, their shapes always vary sizes because the tie dye process is a manual work.
- The ruching only resists temperatures as low as 55 ° C to 58 ° C and as the temperature is increased the finish is degraded. For example, in 78 ° C the finish is lost entirely.
- The satin fabric subjected to the ruching bath should be tied at 100



- ° C so it will not deform or lose its wrinkled figure.
- In the preparation of cocktail dresses, garments are essential hand-sewn models for further testing, otherwise a machine will be used to make the necessary corrections, but unwanted seams will show
- The ruched finish was done in black satin fabric because in the collection of dresses, black satin is used in greater quantity, and the outer cloth is the most visible in the entire collection.
- To get the ruching effect in tissue, make small cuts in the garment since a greater amount of cloth is more difficult to tie, and the finish of some designs will not be appreciated.
- Control the water in the ruching bath since it should cover the entire cloth to achieve the uniform absorption of placed products to get a more visible finish.
- For fabric with finished ruching do not iron at a high temperature, because the wrinkles are easily lost
- Perform centrifuge on cocktail dresses after the ruching bath to remove excess of water and speed up drying.

RECOMMENDATIONS

- When taking the measures, we recommend using a tape measurer which does not deform or stretch while in use, since it would produce a change in the customer's measurements.
- You need to have knowledge of patterns to implement measures on the fabric properly, and manipulate the rulers to make correct lines.
- Use appropriate and necessary implementation for finishing ruching, such as scale, the appropriate container and thermometer to avoid this process and satin fabric spoilage.
- In exercising the finish, follow the curve of ruching to get a successful result.
- The temperature of the dryer must be high to achieve the heat setting of the ruching.
- Prevent the satin fabric from getting small holes because it would make the client disinterested in the clothes

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